



## Victorian Certificate of Education 2005

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

## STUDENT NUMBER

Figures

Words

Letter

# PSYCHOLOGY

## Written examination 2

Thursday 3 November 2005

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

## QUESTION AND ANSWER BOOK

## Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	44	44	44
B	22	22	46
			Total 90

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

## Materials supplied

- Question and answer book of 18 pages.
- Answer sheet for multiple-choice questions.

## Instructions

- Write your student number in the space provided above on this page.
- Check that your name and student number as printed on your answer sheet for multiple-choice questions are correct, and sign your name in the space provided to verify this.
- All written responses must be in English.

## At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

## AREA OF STUDY 2 – LEARNING

## Question 23

Which of the following is not an example of a fixed action pattern?

- A. birds migrating in winter
- B. a spider weaving its web
- C. a dog shaking itself after a bath
- D. sneezing to clear the nose

## Question 24

The sea hare is an animal that has been closely studied in experiments on learning by Eric Kandel.

In the experiments Kandel squirts water at the siphon (mouth) of the sea hare, which makes it withdraw its gills.

When the sea hare withdraws its gills after being squirted the first time, it is demonstrating

- A. a reflex.
- B. a fixed action pattern.
- C. a maturational effect.
- D. classical conditioning.

## Question 25

Babies develop the ability to walk largely through

- A. maturation.
- B. reflex.
- C. classical conditioning.
- D. a fixed action pattern.

## Question 26

The light switch in Eloise's bedroom is faulty so that every time she touches the switch she receives a mild electric shock. After this has happened a few times, Eloise associates light switches with a startle response.

In this scenario, the unconditioned stimulus is

- A. the light switch.
- B. Eloise's bedroom.
- C. the electric current.
- D. the startle response.

## Question 27

In the terminology of classical conditioning, stimuli and responses that do not require any learning are referred to as

- A. unconditioned.
- B. conditioned.
- C. responsive.
- D. spontaneous.

**Question 28**

In John Watson's famous study, Little Albert was conditioned to fear rats by associating them with an unpleasant loud noise.

If Little Albert had then been repeatedly exposed to the white rat, but without the noise, his fear response would have

- A. become stronger.
- B. been extinguished.
- C. generalised to all white furry objects.
- D. spontaneously recovered.

**Question 29**

On a recent very rough trip on the ferry to Tasmania, Harry was eating crayfish in the dining room and became very seasick. Harry now finds he feels nauseated whenever he sees a crayfish.

Harry's nausea is probably a result of

- A. negative reinforcement.
- B. punishment.
- C. conditioned taste aversion.
- D. a learning set.

**Question 30**

One of Thorndike's most important findings from his experiments on cats in puzzle boxes was that

- A. punishment was very effective in modifying the cats' behaviour.
- B. the cats' behaviour was easy to negatively reinforce.
- C. the cats learned to obtain a reward through trial and error.
- D. the cats' behaviour was difficult to reinforce.

**Question 31**

Thorndike's notion that behaviours that are reinforced tend to be repeated is known as

- A. the punishment principle.
- B. the law of effect.
- C. Pavlovian conditioning.
- D. negative reinforcement.

**Question 32**

In operant conditioning an important connection forms between the

- A. unconditioned stimulus and the conditioned stimulus.
- B. stimulus and whatever occurs before it.
- C. unconditioned stimulus and the unconditioned response.
- D. behaviour and the reinforcement that follows it.

**Question 33**

Many of Skinner's original experiments used

- A. an operant conditioning chamber.
- B. a Pavlovian conditioning laboratory.
- C. children.
- D. cats in puzzle boxes.

**Question 34**

In Skinner's original experiments, which schedule of reinforcement led to the most rapid acquisition of learned behaviour?

- A. continuous reinforcement schedule
- B. continuous punishment schedule
- C. fixed interval schedule
- D. variable ratio schedule

**Question 35**

In Skinner's original experiments, behaviour that had been conditioned by which type of schedule was found to be the most difficult to extinguish?

- A. variable schedule
- B. fixed schedule
- C. continuous reinforcement schedule
- D. punishment schedule

**Question 36**

Which type of learning is seen as discouraging bad behaviour instead of encouraging positive behaviour?

- A. positive reinforcement
- B. modelling
- C. negative reinforcement
- D. punishment

**Question 37**

In classical conditioning, the learned response is \_\_\_\_\_, while in operant conditioning the learned response is \_\_\_\_\_.

- A. voluntary; reflexive
- B. spontaneous; involuntary
- C. reflexive; voluntary
- D. involuntary; reflexive

**Question 38**

Kenja wants to train her daughter Kellie to say the word 'butter'. In the beginning she rewards Kellie for saying 'bu'. When she is consistently saying 'bu', Kenja starts to reward Kellie for saying 'bud', and then 'budder'. Finally after a series of these steps Kellie consistently says 'butter'.

Kellie is being trained using the behavioural principle of

- A. classical conditioning.
- B. negative reinforcement.
- C. extinction.
- D. shaping.

**Question 39**

Dorian has always wanted to study jazz ballet but is concerned that he may not have the talent to be successful. He practises at home imitating the dance moves from the movie 'Too Much Jazz' as an example.

Dorian's strategy for studying jazz ballet relies on the principle of

- A. maturation.
- B. classical conditioning.
- C. learning set.
- D. modelling.

**Question 40**

If you are using operant conditioning principles to train a dog, then any punishment you deliver should be administered \_\_\_\_\_ an unwanted response from the dog. Any reward you administer should be administered \_\_\_\_\_ a desired response from the dog. If you are using classical conditioning to train a dog, the conditioned stimulus should be administered \_\_\_\_\_ the dog's response.

- A. after; after; after
- B. after; before; after
- C. after; after; before
- D. before; before; after

*Questions 41 and 42 relate to the following scenario.*

Reginald carefully watches his golf coach hit the ball so that he can improve his own golf game. His golf coach is a champion golfer and Reginald is trying to copy his coach's swings.

**Question 41**

Reginald wants to improve his golf game to impress his parents.

This relates to which factor that might influence Reginald's learning?

- A. attention
- B. retention
- C. reproduction
- D. motivation

**Question 42**

Reginald is nearly 30 cm shorter than his coach.

This relates to which factor that might influence Reginald's learning?

- A. attention
- B. retention
- C. reproduction
- D. motivation

**Question 43**

Bandura's experiments with observational learning in children indicate that

- A. those children who watched an aggressive model being reinforced were more likely to behave aggressively than those who watched an aggressive model being punished.
- B. those children who watched an aggressive model being punished were more likely to behave aggressively than those who watched an aggressive model being reinforced.
- C. those children who watched an aggressive model being reinforced were less likely to behave aggressively than those who watched an aggressive model being punished.
- D. observing an aggressive model has little or no influence on a child's behaviour.

**Question 44**

Research on learning set in monkeys has found that

- A. unlike humans, monkeys cannot develop a learning set.
- B. monkeys can 'learn how to learn'.
- C. monkeys consistently choose a stimulus on the basis of its position.
- D. monkeys' learning does not improve over time.

**AREA OF STUDY 2 – LEARNING****Question 1**

The role of the learner is often described as 'passive' when learning occurs via classical conditioning. What does this description mean?

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1 mark

**Question 2**

In the context of Pavlov's original experiments, describe an example of spontaneous recovery.

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2 marks

**Question 3**

When children do not get their own way they will sometimes throw temper tantrums where they hold their breath and roll about banging their hands and feet on the floor. Parents embarrassed and concerned about this behaviour often do what the child wants in order to stop the behaviour.

a. In terms of reinforcement of the child, what happens when the parents give in?

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1 mark

b. What will most likely happen in the future as a result of the parents doing what the child wants?

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1 mark

c. What type of reinforcement do the parents receive as a result of doing what the child wants?

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1 mark

d. The child has learned that throwing a tantrum in certain places results in the parents giving in more quickly (for example, the supermarket checkout, quiet places such as churches or libraries). The ability of the child to throw tantrums in those places is an example of \_\_\_\_\_

1 mark

e. Using the language of learning theory, name and describe **one** strategy that the parents could use to reduce the child's tantrums.

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2 marks

**Question 4**

Describe two factors that could influence the likelihood of you imitating a model's behaviour.

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2 marks

**Question 5**

Describe two current ethical principles that Watson appeared to violate when he conducted his research on Little Albert.

1. \_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

2 marks

**Question 6**

Natalie is a highly skilled goal shooter in her netball team. One Saturday, she decides to play in a basketball match. Explain how a learning set might influence her performance in the basketball match.

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1 mark

### AREA OF STUDY 3 – RESEARCH INVESTIGATION

Read the following research investigation. All the questions which follow relate to this investigation.  
Answer all the questions.

Rhonda believes that acting out a passage from a novel is a better method for learning the passage than simply reading and repeating it to oneself. She thinks this would be true for all VCE students in Victoria.

To test her idea, Rhonda uses two Year 12 Psychology classes at her all girls school. Forty-six students are randomly assigned to one of two groups. One group acts out the passage in front of the rest of the class. The other group is given the passage and told to read and repeat it quietly to themselves.

Each participant then sits a comprehensive test and Rhonda marks and records the number of correct answers.

The results are as follows.

Group 1 (acting out the passage): Mean test score = 80%

Group 2 (reading and repeating the passage to oneself): Mean test score = 70%

A statistical test on these results found that  $p > 0.05$ .

#### Question 1

Why is this study an experiment?

1 mark

#### Question 2

Why does Rhonda's research method allow her to infer a cause and effect relationship?

1 mark

#### Question 3

Construct an operational hypothesis for this study.

1 mark

#### Question 4

a. What is the independent variable?

1 mark

b. What is the dependent variable?

1 mark

#### Question 5

Describe an alternative research design method that Rhonda might use. Clearly point out **one** advantage that this alternative method might have over Rhonda's design.

2 marks

#### Question 6

Describe two ethical principles that Rhonda should follow in the conduct of this study.

1.

2.

2 marks

#### Question 7

a. What conclusion can be drawn from the descriptive statistics that Rhonda provided?

1 mark

b. Name one other descriptive statistic that Rhonda could calculate. What information about the results would this provide?

2 marks

#### Question 8

What statistical conclusion can Rhonda infer from these results?

1 mark

**Question 9**

Based on her sampling method, what conclusion can Rhonda reach about the underlying population from which the sample was drawn? Explain.

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2 marks

**Question 10**

- a. Indicate **one** possible extraneous variable that might affect these results. Clearly explain how it could affect the results.

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2 marks

- b. Describe **one** way in which this extraneous variable might be controlled.

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1 mark

## 2005 Assessment Report

### 2005 Psychology GA 3: Written Examination

**GENERAL COMMENTS**

Students' performance on the November 2005 paper was generally comparable with 2004 and previous years, despite the slight change in format. As in the June examination, it appeared that students continued to have some difficulty interpreting questions and answering precisely. In two areas of study, the mean score on the Multiple-choice section was higher than the mean score on the equivalent Short-answer section. As in previous years, this tended to be as a result of imprecise or incomplete answers in the Short-answer section.

In contrast to 2004, the 'Learning' section yielded the highest average score in the Short-answer section (65%), followed by 'Research Methods' (41%) and 'Memory' (39%). In the Multiple-choice section, the mean scores for Memory (76%) and 'Learning' (75%) were very similar.

Students are advised that they should attempt all questions in the Multiple-choice section, even if they are unsure of the answer. Where a question is skipped or left for later, students must ensure that they continue to mark their responses on the answer sheet on the correct line for each question. Where answers are shaded on the incorrect line, marks cannot be awarded. Students are reminded that they are not penalised marks for incorrect answers in the Multiple-choice section, so they should have a 'best guess' and record an answer for all questions.

**Marking Policy**

In general a two-mark question requires two pieces of information: one mark is given for each part and answers that fail to address both parts cannot achieve full marks. In this examination this applied, for example, to Question 5 in Area of Study 1, and Question 2 in Area of Study 2.

Where a question requires the definition of a term, the use of that term (or its derivatives) as part of its own definition precludes assessors awarding full marks for that response. Clearly such a response would not show full understanding. This related to Question 4 in Area of Study 1.

This examination contained several questions in which students were required to highlight similarities or differences. Students should indicate where the similarity or difference lies; for example in Question 4, Area of Study 1 a useful structure for the response would be: 'A similarity is that both involve...A difference is that...But in contrast...'

This examination contained several questions in which students were required to answer with respect to a certain theory or context; for example, 'Pavlov's original experiments' (Question 2, Area of Study 2). In such questions students must be careful to follow the instructions.

**Section A – Multiple-choice questions**

Although this section of the examination was different in structure from previous years, the individual questions were identical in nature to those used in previous years and the new format caused no difficulty for students.

Few questions were found to cause difficulty – those that did are highlighted in the comments below.

The table below indicates the percentage of students who chose each option. The correct answer is indicated by shading.

Question	% A	% B	% C	% D	% No Answer	Comments
<b>Area of Study 1 – Memory</b>						
1	92	6	1	1	0	
2	91	4	2	3	0	
3	2	96	2	1	0	
4	76	15	9	1	0	
5	2	3	90	5	0	
6	2	12	24	61	1	'Working Memory' was new to the Study Design and some students were unclear about the functions of the three accepted components: the phonological loop, the visuo-spatial sketchpad and the central executive.

Question	% A	% B	% C	% D	% No Answer	Comments
7	1	1	2	96	0	
8	10	83	3	3	0	40% of students chose the incorrect option A – 'semantic memory', probably because of a failure to understand the implications of the terminology in the question. 'Semantic' was not correct because the question specifically stated, 'John's ability to recall where his seat is when he returns from the toilet relies mainly on his'.
9	40	9	89	12	0	The large percentage of students who chose the incorrect option A again shows the importance of reading the question carefully – the statement in A is entirely correct, but it does not relate to semantic network theory as required by the question.
10	21	75	2	2	0	
11	3	3	83	1	0	
12	22	1	3	74	0	
13	70	27	2	1	0	
14	27	70	1	1	0	In both Questions 13 and 14, 27% of students confused proactive and retroactive interference. Proactive interference involves earlier learning inhibiting learning and retrieval on a later occasion; it is the past influencing the future.
15	3	93	2	2	0	
16	13	6	10	71	0	
17	21	1	1	76	0	Research shows that there is little or no change in recognition ability in a healthy elderly person.
18	4	72	5	18	0	The organic decay that causes dementia, which is not uncommon in elderly people, is eliminated as a possible answer here because Mrs Cunningham is described as a 'fit and healthy' lady.
19	42	3	54	1	0	Procedural memories appear to be most resistant to decline in elderly people. It is the episodic aspect of declarative memory that is most subject to decline.
20	14	9	4	73	0	
21	6	3	14	76	0	Students who chose option C apparently fixated on the figure '0.05', and failed to recognise the significance of the inequality sign – in this case, 'greater than'.
22	50	9	31	10	0	
<b>Area of Study 2 – Learning</b>						
23	4	2	12	81	0	
24	91	6	1	2	0	
25	92	1	3	4	0	
26	36	4	53	5	0	In this scenario, the light switch is the neutral stimulus – later to become the conditioned stimulus.
27	72	11	8	9	0	
28	2	88	7	6	0	
29	5	0	91	3	0	
30	4	3	92	1	0	
31	2	89	3	5	0	
32	13	2	9	75	0	
33	81	4	7	8	0	

Question	% A	% B	% C	% D	% No Answer	Comments
34	63	7	16	14	0	Incorrect responses were mainly spread among options C and D. The findings, supported by later research, were that continuous reinforcement (reinforcement of every response) leads to most rapid acquisition – though this is also the schedule least resistant to extinction.
35	46	21	23	10	0	Both 'variable interval' and 'variable ratio' schedules of reinforcement are more resistant to extinction than 'fixed interval' and 'fixed ratio' schedules.
36	3	3	23	71	0	'Punishment' always weakens a response, whereas 'negative reinforcement' always strengthens a response.
37	9	5	70	16	0	
38	12	2	1	84	0	
39	0	1	12	86	0	
40	12	3	84	1	0	
41	9	3	3	84	0	
42	15	10	69	7	0	
43	90	4	4	1	0	
44	6	79	14	2	0	

## Section B – Short-answer questions

### Area of Study 1 – Memory

For the first time, students found this Area of Study to be the most difficult of the three. The average score was 39 per cent for the Short-answer section.

#### Question 1

Marks	0	1	2	Average
%	20	28	52	1.3

Differences include:

- the difference in terms of stages of processing – the sensory memory stage occurs before short-term memory
- the difference in terms of duration – sensory memory is of much shorter duration (0.3 seconds for iconic or three to four seconds for echolic) than short-term memory (18 to 20 seconds)
- the difference in capacity – sensory memory has a larger capacity (virtually unlimited) than short-term memory (which is seven plus or minus two items)
- if material is attended to it cannot remain in sensory memory – material in short-term memory can be consciously manipulated or 'worked', whereas material in sensory memory cannot
- energy/material in sensory memory is in unprocessed form, whereas material in short-term memory has been processed
- people have a conscious awareness of the material in short-term memory, whereas material in sensory memory has not reached conscious awareness.

#### Question 2a

Marks	0	1	Average
%	22	78	0.8

The essential feature of maintenance rehearsal is repetition without adding meaning or linking to material in the semantic network. For example, simply looking at each photo in a serial fashion and repeating the name of child—either vocally or silently—while looking at the photo, and repeating this process over and over.

#### Question 2b

Marks	0	1	Average
%	27	73	0.7

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Elaborative rehearsal is memorising by linking new material with established material in the long-term memory.

- Procedures could include:
- method of loci, if the children sit regularly in the same seat
  - associate a characteristic of each child with their name; for example, 'Tall Tom', 'Happy Harry'.

A description of any elaborative technique was acceptable, including the use of mnemonics.

Answers to parts a. and b. had to relate to the example, which described photos of each child holding up their names on pieces of paper. Many students suggested systems such as 'writing the children's names on the back of the photograph and doing a "look - cover - check" system'. This was not correct.

**Question 3a.**

Marks	0	1	Average
%	72	28	0.3

Information is forgotten because of the gradual loss of a physical (biological/bio-chemical, etc.) memory trace; it is a reversal/dissolution of the change made when the memory was formed (consolidated).

Many students simply indicated that the '... memory faded because it is not revisited over time', which was not a full explanation. Students needed to explain that it is this lack of revision that then enables the memory trace - a physiological change in the brain chemistry - to disappear.

**Question 3b.**

Marks	0	1	2	Average
%	59	18	22	0.7

Criticism included:

- decay theory does not explain why some unused memories fade whereas other unused memories can be recovered, given the right cues
- decay theory depends on the theoretical notion of the memory trace, which has yet to be established scientifically
- decay theory cannot explain why older people, particularly those suffering from dementia, fail to remember recent events, but have vivid memories of events long past.

**Question 4**

Marks	0	1	2	Average
%	24	38	38	1.2

In retrieval failure theory, forgetting occurs because you cannot access the appropriate cues, whereas interference theory argues that material cannot be recalled because memories for other material prevent access to the material that you are attempting to recall (retro-active interference) or memories may not be efficiently stored because of the presence of previously learned material (pro-active interference).

Many students fell into the trap of merely rephrasing the question in their answer, without explaining the meaning of 'retrieval failure' or 'interference'.

**Question 5**

Marks	0	1	2	3	Average
%	38	25	27	10	1.1

Method of loci involves:

- linking the material to be learned to established places that can be easily recalled from the long-term memory (for example, locations in your house, landmarks on your way from home to school) or points on an easily imagined scene or figure (for example, the Roman Forum, the back of your hand).
- visualising images of the items to be remembered and each of the loci
- recalling the items by mentally moving through the established loci in serial order, so that the images cue recall of the items

The technique is best for recalling lists of items (in a particular order).

## 2005 Assessment Report

Key points that needed to be made were:

- places or locations (in sequence)
- visualisation and linking (it was not enough to just say 'associate' - association could also refer to narrative chaining)
- recalling lists of items/series of items/items you can visualise.

This question was generally poorly answered. Many students appeared to think that the method of loci is a means of remembering places rather than a method of using familiar places as cues to assist recall.

**Question 6a.**

Marks	0	1	Average
%	26	74	0.8

Students needed to identify the following:

- the population is primary school children
- the independent variable is teaching with the Allan technique or not
- the dependent variable is memory ability.

Good answers also provided an operational definition of 'memory ability'.

**Question 6b.**

Marks	0	1	Average
%	45	55	0.6

With adult university students, Professor Allen would not be required to obtain informed consent from the parents or guardians of the participants, which she would be required to do with the student participants at the primary school. Instead, she would be required to obtain informed consent from the adult participants directly.

### Area of Study 2 - Learning

For the first time, students found this Area of Study to be the most accessible of the three, with an average score of 65 per cent.

**Question 1**

Marks	0	1	Average
%	40	60	0.6

The behavioural response to the unconditioned stimulus or conditioned stimulus occurs automatically; the respondent is not required to make an active effort in responding.

Any statement that said 'the learner is not active in the learning process' gained a mark for this question. The question was moderately well answered.

**Question 2**

Marks	0	1	2	Average
%	50	34	16	0.7

After the dog has been conditioned to salivate at the sound of the bell, the bell being the conditioned stimulus (CS), extinction occurs after repeated exposure to the CS without the unconditioned stimulus (UCS), the food. That is, the dog fails to produce the conditioned response (CR), salivating, upon presentation of the CS alone without the UCS. After a time gap, the CS is presented again, without the presentation of the UCS, but the CR (salivation) occurs. We say that it has spontaneously recovered; the CR re-occurs after it has been previously extinguished.

Students were required to provide an appropriate description of the re-appearance of an extinguished response after a rest period. Students were expected to refer to dogs as the subjects and salivation as the conditioned response, but may have referred to any appropriate stimulus as the conditioned stimulus (a bell, buzzer, metronome, tuning fork or light - all of which were used) and any appropriate unconditioned stimulus (food, meat, meat-powder, etc.).

Many students appeared to be unfamiliar with Pavlov's experiments and many confused Pavlov with Watson and described conditioning Albert B. to fear a white rat. This question was poorly answered.



Question 3a.

Marks	0	1	Average
%	43	57	0.6

The child's tantrums are positively reinforced.

Question 3b.

Marks	0	1	Average
%	21	79	0.8

Because the temper tantrums have been positively reinforced they are likely to occur with increased frequency or intensity when the child is in a similar situation.

Question 3c.

Marks	0	1	Average
%	26	74	0.8

Negative reinforcement – their behaviour results in the removal of a noxious or aversive stimulus.

Question 3d.

Marks	0	1	Average
%	75	25	0.3

stimulus generalisations/discrimination

Both of the above terms were allowed, due to the similarities among the three locations specified (public places) and the differences (noisy or quiet locations). However, this question was still poorly answered.

Question 3e.

Marks	0	1	2	Average
%	21	33	46	1.3

Possible answers included:

- punishment – delivering some form of aversive, unpleasant stimulus in response to the behaviour
- extinction – simply ignoring the child, therefore not providing any form of positive reinforcement
- token economy
- positive reinforcement
- negative reinforcement
- shaping
- method of successive approximations
- modelling.

Any correctly named and described strategy was acceptable.

Question 4

Marks	0	1	2	Average
%	10	24	66	1.6

Possible answers included:

- whether the model was reinforced for the behaviour
- whether the model received neither reinforcement nor punishment for the behaviour
- whether the model was punished for the behaviour
- the amount of attention that you pay to the model
- your ability to remember what the model did (retention)
- your ability to reproduce the modelled behaviour (reproduction)
- the amount of motivation that you have to repeat a task
- the characteristics of the model, such as attractiveness and trustworthiness
- the capabilities of the model
- your admiration for the model, their status and their power.

Question 5

Marks	0	1	2	Average
%	7	25	68	1.6

Possible answers included:

- voluntary participation
- violation of confidentiality
- no withdrawal rights
- fully informed consent – if Little Albert's mother gave consent (but it is unlikely that it was the informed consent that we would demand today)
- beneficence – no physical or psychological harm to be caused to participants (that is, the harm caused to Little Albert outweighs the benefit of the knowledge obtained)
- integrity
- justice
- counselling/extinction of the fear response
- debriefing – there is no evidence that Watson debriefed Little Albert's parents.

This question was generally well answered.

Question 6

Marks	0	1	Average
%	23	77	0.8

Either of the following answers was acceptable.

- Natalie may be able to learn shooting in basketball quickly because of her past experience (by positive transfer).
- Natalie's experience with netball rules (for example, no running, bouncing and dribbling, and restrictions on court access) may hinder her performance in the basketball match.

### Area of Study 3 – Research Investigation

This section included a comprehension component. Students were required to apply psychological principles and demonstrate an understanding of those principles using the research described as the basis for all responses. Many students lost marks because they provided generic answers and failed to relate their answers to the scenario given.

Common errors that showed misinterpretations of the scenario given included statements such as:

- the reading group was 'reading aloud' to the class
- the population consisted of all VCE Psychology students/all students/all people/all Year 12 students/female VCE students
- there were 46 students in each group
- comprehension test (rather than 'comprehensive' test)
- the results were statistically significant.

#### Question 1

Marks	0	1	Average
%	59	41	0.4

- It is testing a hypothesis under controlled conditions to explore the effect of an independent variable on a dependent variable.
- Participants are randomly assigned to the levels of the independent variable.
- The levels of the independent variable are directly manipulated/controlled by the investigator.
- The dependent variable is clearly operationalised.
- There is an experimental and a control group.

#### Question 2

Marks	0	1	Average
%	74	26	0.3

Because it is a true experiment. The only thing differing between the control and experimental groups is the manipulation of the levels of the independent variable; therefore, any difference in the dependent variable between the two groups is causally attributed to the manipulation of the independent variable.

Students needed to indicate that the experimental design enables a judgement to be made that a change in the dependent variable will be the result of a change in the independent variable.

Question 3

Marks	0	1	Average
%	29	71	0.7

VCE students who act out a passage from a novel will learn the passage better than students who read and repeat the novel to themselves.

Students needed to identify the following:

- the population is VCE students (or VCE psychology students)
- the independent variable is the dichotomy, acting out or reading
- the dependent variable is learning of a passage
- the dependent variable is operationalised as a score on the comprehensive test.

Question 4a.

Marks	0	1	Average
%	48	52	0.5

The method of learning the passage – acting out or reading to themselves.

Question 4b.

Marks	0	1	Average
%	37	63	0.7

Learning a passage from a novel or scores on the comprehensive test related to the learning of the passage.

Question 5

Marks	0	1	2	Average
%	43	23	34	0.9

Either of the following methods was correct.

- Matched participants design, where participants are matched according to variables whose influence should be controlled (for example, memory ability, intelligence and reading ability). The advantage of this design is that some control is gained over the influence of extraneous variables in the research.
- Repeated measures design, in which all participants are required to learn two passages – one using the acting out method and one using the quiet reading method. Advantages of this method would be the need for fewer participants and control over extraneous participant variables.

'Single-blind design' and 'double-blind design' were not acceptable, since either of these may be applied to any of the three research design methods identified in the Study Design.

Question 6

Marks	0	1	2	Average
%	12	38	50	1.4

Possible answers included:

- voluntary participation
- informed consent
- no deception
- debriefing
- no lasting harm
- respect the rights of the individual participant
- protect the welfare of participants
- withdrawal rights
- of benefit to society

- researcher should have a suitable level of experience and skill.

Many students gave debriefing as the ethical consideration, but appeared unsure of the exact procedures involved in this process. Debriefing essentially:

- provides an opportunity for participants to obtain appropriate information about the nature, results and conclusions of the research
- corrects mistaken attitudes and beliefs about the research
- anticipates the subsequent effects of research participation and provides information on services available to alleviate unnecessary distress that may arise from the participation.

Question 7a.

Marks	0	1	Average
%	96	4	0.1

None, because these are descriptive statistics.

This question was very poorly answered. It is clear that students did not understand the limitations of descriptive statistics.

Question 7b.

Marks	0	1	2	Average
%	69	11	20	0.5

Any valid descriptive statistic, statistical calculation or graphical representation was accepted. These included:

- standard deviation – shows the variability between groups
- mode – shows the most common score in each group
- median – shows the middle number/mid-point for each group, not the middle score
- percentile difference – shows the percentage difference between Groups 1 and 2
- frequency distribution – shows a comparison of the 'shape' of distribution for each group

Kurtosis, skewness, variance and range (total or interquartile) were also accepted if appropriately described.

Question 8

Marks	0	1	Average
%	71	29	0.3

Because  $p > 0.05$ , the difference between the groups is not statistically significant. Therefore, she cannot draw any statistical conclusion.

Many students suggested that she would conclude that the difference was probably due to chance alone – this is incorrect and shows a lack of understanding of the concept of statistical significance at the five per cent level.

This question was poorly answered.

Question 9

Marks	0	1	2	Average
%	55	24	21	0.7

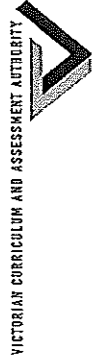
She cannot reach any firm conclusion about the population (all VCE students) because the sample is limited to only girls/psychology students/one school. Because her sample is not truly representative of the population of interest, she cannot reach any definitive conclusions.

This question demonstrated the importance of reading carefully and answering the question as it is set. The phrase 'Based on her sampling method ...' sets the parameters for the response to the question.

Question 10a.

Marks	0	1	2	Average
%	30	25	46	1.2

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Any viable extraneous variables were accepted, including:

- any participant variable; for example, the students' intelligence, memory ability, mood, motivation, past experience with that novel
- experimenter effects; for example, the researcher might treat the participants differently in the two groups because she has an expectation that one group will perform better than another
- situational variables; for example, the physical environment in which the acting out or quiet reading took place.

Experimenter effects could influence the result because if Rhonda believed that the acting-out group would achieve a better understanding, then her grading of the comprehensive test may be biased in favour of those students.

Question 10b.

Marks	0	1	Average
%	45	55	0.6

Any appropriate method of controlling the influence of an extraneous variable was acceptable, providing there was a direct match between the source of the error described in the previous part of this question and the method of control.

For example:

- an answer to the previous question that highlighted students' memory ability should have suggested matching participants on memory ability in matched participants design, or using a repeated measures design as an appropriate control
- an answer that highlighted experimenter bias could have described a method such as using people other than the researcher to interact with both groups of students
- an answer that highlighted situational variables should have suggested making the situation consistent and appropriate for both groups.